

Town of Enfield Public Information Meeting

The Presence of PCBs at John F. Kennedy Middle School

August 24, 2017

For Tonight

- What are PCBs;
- How did we get to tonight;
 - Issue Timeline
 - Technical Information & data
- What are the health effects;
- What are we doing now and tomorrow; and
- Questions & Answers Session

PCBs

- PCBs, or polychlorinated biphenyls, are industrial products/chemicals;
- Amid suggestions that PCBs may have unintended impacts on human and environmental health, their use was prohibited in 1979;
- Prior to 1979, an estimated 1.5 billion pounds of PCBs were made for things such as microscope oils, electrical insulators, capacitors, and electric appliances such as television sets or refrigerators.
- PCBs were used as effective additives in caulking and paints because of their plasticizer properties.

Timeline

- Spring 2016: Council creates the JFK Pre-Referendum to Evaluate the future of JFK.
- Summer 2016: Committee hires Silver Petrucelli (SP) to help them in their charge.
- February 2017: SP recommends PCB testing to verify initial construction estimates.

Timeline

- March 2017: Fuss & O'Neill (F&O) conducts materials testing for PCBs.
- April 2017: * Materials testing results were provided to the Town;
* Test Results forwarded to public health for review;
* Indoor air & swipe testing recommended by F&O.
- May 2017: Air & swipe testing approved by Council and testing begins.

Timeline

- June 2017: * Initial indoor testing series is completed;
* Second indoor testing series is completed;
* Town informally notified of results.
- July 2017: * Town receives formal air & swipe testing results;
* Test Results forwarded to public health for review;
* F&O submits proposal for Management Plan;
* Proposal reviewed by public health;
* Proposal updated and resubmitted for Council action.

Timeline

- August 2017:
 - * F&O hired to write and administer Management Plan;
 - * EPA, DEEP, & SHD notified of PCB detection at JFK;
 - * Short-term remediation efforts executed;
 - * Additional testing authorized & occurring;
 - * F&O working with regulators on long-term remediation plan;
 - * Public communication and outreach;

John F. Kennedy Middle School Enfield, CT

Carlos Texidor
Senior Project Manager



John F. Kennedy Middle School, Enfield, CT

- **Fuss & O'Neill EnviroScience conducted a Feasibility Study-Limited Hazardous Building Materials Inspection at the Subject school in support of major renovations planned to start in the summer of 2019/20. The services were performed on March 29, 2017 and from April 10 through April 14, 2017.**
- **The Feasibility Study-Limited Hazardous Building Materials Inspection included a limited asbestos inspection, lead-based paint screening, and sampling for PCBs in source building materials, PCB bulk sampling, and an inventory of PCB-containing ballasts and mercury-containing lamps**

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Summary of Asbestos-Containing Materials

Material Type	Location	Asbestos Content
1/2", White/Lt Grey, Heavily Weathered, Hard Caulking - Exterior Window Frame To Brick Façade	Exterior Window Frame to Brick Façade throughout the Original JFK Building	4% Chrysotile
1/4", Light Grey/Off-White, Hard Brittle Caulking - Exterior Window Frame To Brick Façade	Exterior Window Frame to Brick Façade - Type 3 Windows	3% Chrysotile
1/2", White, Brittle Caulking – Exterior Door Frame To Brick Façade	Exterior Door Frames to Brick Façade throughout the Original JFK Building - Type 3 Doors	2% Chrysotile
3/8", Light Tan, Hard Caulking – Exterior Door Frame To Brick Façade	Exterior Door Frames to Brick Façade throughout the Original JFK Building - Type 4 Doors	2% Chrysotile
White/Lt Grey, Heavily Weathered, Hard Caulking - Exterior Louvers And Vents To Brick Façade	Exterior Louvers and vents	> 1% Chrysotile
Backing Material/Paper-Light Off-White, Flexible	30' x 30' relocatable modular classrooms field of roof-3rd layer	2% Chrysotile
Base Layer-Backing Material/Paper-Light Beige, Adhere To Plywood	30' x 30' relocatable modular classrooms topside of plywood deck	30% Chrysotile
Flashing-Med Hard, Black/Dark Brown	Original school building vents and flashing	2% Chrysotile

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Analytical Results for Suspect PCB Source Samples

Type	Configuration	Description	Sample ID	Sample Date	Total PCBs (ppm)
Exterior Windows, Louvers, Vents and Sills					
A	Metal window frame to exterior brick façade and steel lintel (All window configurations throughout original building)	1/2", white/light grey, hard, heavily weathered	PCB-01A	3/29/2017	5.8
			PCB-01B	3/29/2017	3.2
			PCB-01C	3/29/2017	2.3
B	Metal window frame to exterior brick façade and steel lintel (Repair Caulking at Type 3 windows)	1/4", light grey/off-white, hard, brittle	PCB-02A	3/29/2017	1,100
			PCB-02B	3/29/2017	50,000
			PCB-02C	3/29/2017	15
C	Metal window frame to exterior brick façade and steel lintel (Repair Caulking at Type 6 windows)	1/2" light grey/brown, soft, flexible	PCB-03A	3/29/2017	2.5
			PCB-03B	3/29/2017	4,800
D	Pre-cast concrete sill to exterior brick façade (All window configurations throughout original building)	1/2", white, oxidized, medium hard	PCB-04A	3/29/2017	36,000
			PCB-04B	3/29/2017	21,000
			PCB-04C	3/29/2017	4.5
E	Pre-cast concrete sill to exterior brick façade (Repair Caulking at Type 3 windows)	1/2", light grey/brown, soft, flexible	PCB-03C	3/29/2017	29,000
A	Metal window frame to glass pane (All window configurations throughout original building)	1/4" - 1", white, hard, heavily weathered	PCB-05A	3/29/2017	2.8
			PCB-05B	3/29/2017	0.62
			PCB-05C	3/29/2017	1.8
A	Metal door frame to exterior brick façade (Type 1 and 2 Exterior Doors)	1/2", light grey/brown, soft, flexible	PCB-07A	3/29/2017	ND
			PCB-07B	3/29/2017	2.4
			PCB-07C	3/29/2017	0.96

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Analytical Results for Suspect PCB Source Samples

Type	Configuration	Description	Sample ID	Sample Date	Total PCBs (ppm)
Exterior Windows, Louvers, Vents and Sills					
B	Metal door frame to exterior brick façade (Type 3 Exterior Doors)	½”, white, brittle	PCB-08A	3/29/2017	2.8
			PCB-08B	3/29/2017	5.8
			PCB-08C	3/29/2017	ND
C	Metal door frame to exterior brick façade (Type 4 Exterior Doors)	3/8”, light tan, hard, (painted)	PCB-09A	3/29/2017	1.4
			PCB-09B	3/29/2017	4
			PCB-09C	3/29/2017	3.3
A	Exterior Expansion Joints within Brick Facade	½”, light grey/off-white soft, flexible	PCB-10A	4/14/2017	11,000
			PCB-10B	4/14/2017	29,000
				4/14/2017	
B	Exterior Expansion Joints within Brick Facade	white/light grey, hard heavily weathered	PCB-11A	4/14/2017	58,000
			PCB-11B	4/14/2017	41,000
			PCB-11C	4/14/2017	79,000
Food Labs Room 36/37					
A	Interior Caulking at Backsplashes, Sinks and Countertops	½”, white, soft, flexible	PCB-12A	4/14/2017	11
			PCB-12B	4/14/2017	7.9
			PCB-12C	4/14/2017	4.7
Interior Partition Door and Window Assembly					
A	Interior Glazing between Metal Frame and Masonry Wall	½”, black, flexible, soft, sticky	PCB-13A	4/14/2017	8.4
			PCB-13B	4/14/2017	8.7
			PCB-13C	4/14/2017	11

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Analytical Results for Suspect PCB Source Samples

Type	Configuration	Description	Sample ID	Sample Date	Total PCBs (ppm)
Interior Masonry Joints					
A	Vertical Joints throughout Hallways Masonry Walls to Concrete Column	1/2", light grey, soft, flexible (foam backing within joint)	PCB-14A	4/14/2017	76,000
			PCB-14B	4/14/2017	110,000
			PCB-14C	4/14/2017	77,000
Exterior Windows					
A	Interior Caulking at Exterior Windows	1/2", off-white/ light grey, hard, brittle	PCB-15A	4/14/2017	4
			PCB-15B	4/14/2017	25
			PCB-15C	4/14/2017	3.6

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- Based on the analytical results for the identified interior source materials, PCB Bulk Product source materials are present within the interior and exterior of the original JFK Middle School building with reported concentrations above 50 ppm. Indoor air samples within the original JFK School were collected to assess the presence of PCBs within the indoor air, and indoor wipe samples were collected from horizontal surfaces (i.e. desks, window sills, shelves, etc.) within the original JFK School to assess the presence of PCBs present on the horizontal surfaces.
- We collected 46 indoor air samples in our initial sampling event, and analyzed 42 samples including a blank. The school was occupied (Summer Conditions) and open during our initial Air and Wipe sampling. Based on the analytical results for the initial round of indoor air sampling, 1 exceedance above the published limit of 300 ng/m³ PCBs (nanograms per cubic meter) for students between the ages of 6 and 12 was reported at a concentration of 357 ng/m³ PCBs (nanograms per cubic meter) within the boys' locker room.

John F. Kennedy Middle School, Enfield, CT

- Ten (10) additional confirmatory indoor air samples were collected on June 23, 2017 to provide additional indoor air data following review of the analytical results from the initial round of sampling. Two indoor air samples were collected at five pre-designated representative locations. Two air samples were collected within the 2nd floor hallway of the blue wing; 1 sample contained concentrations of PCB homologs at 422 ng/m³ (nanograms per cubic meter) PCBs, which exceeded the published limit of 300 ng/m³ PCBs for students between the ages of 6 and 12. Masonry/CMU Control joints are predominately present in hallways of the school. A total of 24 air samples were collected within the hallways in two sampling rounds.
- We also collected hexane wipes from various surfaces as part of the initial indoor air sampling events on May 24-25, 2017. Hexane wipe samples were collected from window sills associated with exterior window PCB caulking compound and flooring located directly beneath the interior masonry wall control caulk joints. Additional hexane wipe samples were collected from targeted horizontal surfaces within food preparation areas to include the kitchen and Food Labs (Rooms 36 and 37).

John F. Kennedy Middle School, Enfield, CT

- Eight hexane samples were collected from window sills in classrooms, offices, and various spaces throughout the school. Five hexane wipe samples collected from the window sills within the administrative wing, white wing, and blue wing were reported above EPA suggested guidance concentration of $1 \mu\text{g}/100 \text{ cm}^2$ (micrograms per 100 square centimeters) threshold with reported concentrations of 1.1, 1.1, 1.2, 1.3, and $1.4 \mu\text{g}/100 \text{ cm}^2$.
- Five hexane samples were collected from the base of the masonry/CMU control joints in the hallway throughout the school. One (1) hexane wipe sample collected from the base of the masonry/CMU control joints (floor sample) was reported above EPA suggested guidance concentration of $1 \mu\text{g}/100 \text{ cm}^2$ threshold with reported concentrations of $1.1 \mu\text{g}/100 \text{ cm}^2$.

Polychlorinated Biphenyls (PCBs) and Health

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August 24, 2017

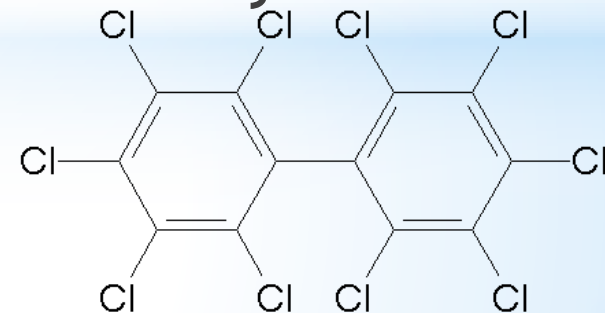


Connecticut Department of Public Health
Keeping Connecticut Healthy



What Are PCBs?

- Polychlorinated Biphenyls
- Mixtures of more than 200 individual compounds (congeners)
- Known in the US by trade name Aroclor
- Manufactured in US from ~1930 - 1977
- No smell or taste
- Persistent in environment and in the body
- Bioaccumulate, stored in fat



How were PCBs used?

- Coolants and lubricants in electrical equipment
 - Resistant to heating/burning
 - Good insulators
- Plasticizers
 - Paints, plastics, rubber products, caulk, grout
- Inks, pesticides, adhesives, sound/fireproofing



How Can PCBs Get Into the Environment?

- Manufacturing process (historic)
- Leaks/fires in products containing PCBs
- Disposal of PCB-containing wastes
- Waste incineration
- Degredation/disturbance of PCB-containing building materials

PCBs can remain in the environment a long time because they don't break down easily.

How Can PCBs Affect My Health?

- Skin disorders (lesions, rashes), eye irritation from very high levels (animals and people)
- Liver damage (animals and people)
- Harm to immune, endocrine, reproductive systems (animals)
- Children (exposure before birth)
 - Some had problems with growth, learning and development after high exposures to mother during pregnancy

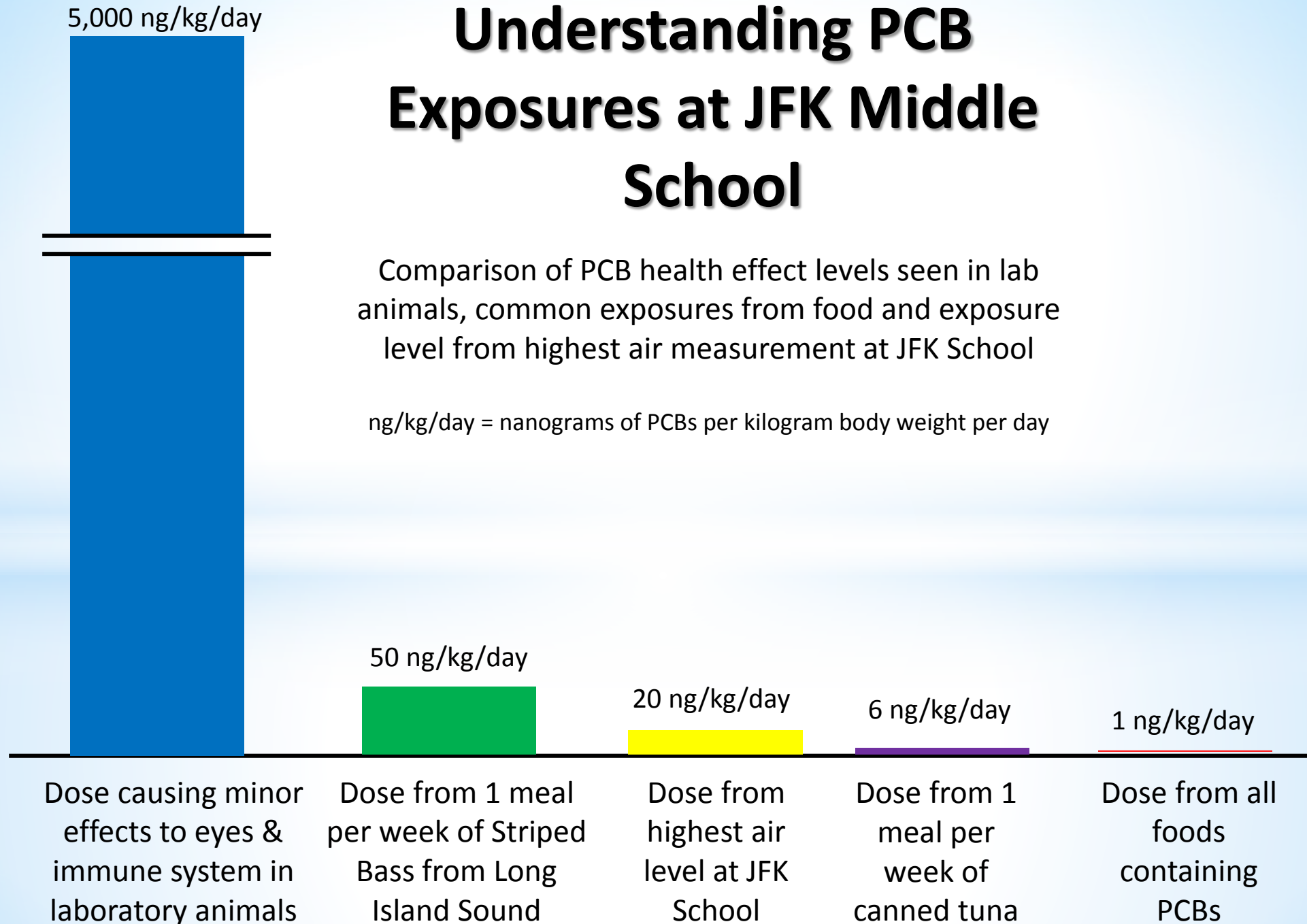
Can PCBs Cause Cancer?

- Workers with high exposure over a long time may be more likely to get liver cancer
- Animal studies show PCB exposure is associated with liver cancer
- Based on cancer evidence in animals, PCBs are classified as *probably* carcinogenic in people

Understanding PCB Exposures at JFK Middle School

Comparison of PCB health effect levels seen in lab animals, common exposures from food and exposure level from highest air measurement at JFK School

ng/kg/day = nanograms of PCBs per kilogram body weight per day



Remediation Activity

- Immediate:

- * Modified & Increased Use of Ventilation System;
- * Increased Use of Wet Cleaning Methods;
- * Facility HEPA Vacuumed;
- * Interior Expansion/CMU Joints Sealed & Covered;
- * Exterior Debris Removed

Remediation Activity

- On-Going:

- * Modified & Increased Use of Ventilation System;
- * Increased Use of Wet Cleaning Methods;
- * Facility HEPA Vacuumed;
- * Regular, Random Air & Swipe Sampling;
- * Regular Facility Inspection for Exterior Debris

Remediation Activity

- Summer of 2018:
 - * Uncover CMU/Expansion Joints;
 - * Remove Contaminated Caulk;
 - * Reseal & Cover CMU/Expansion Joints;

Remediation Activity

- Long-term:
 - * Removal of PCB-containing materials in the window systems;
 - * Removal of PCB-containing materials door systems;
 - * Removal of PCB-containing materials secondary surfaces;
 - * Removal of PCB-containing materials soils;
 - * Removal of other items as identified.

QUESTIONS